

January 6, 2006

Peter Van Alyea
Redwood Oil Company
50 Professional Center Drive, Suite 100
Rohnert Park, CA 94928

Ground Water Monitoring Report
November 2005
Redwood Oil Service Station #102
7716 Old Redwood Highway
Cotati, California
ECM Project # 98-516-14

Dear Mr. Van Alyea:

This report provides the results of the quarterly ground water monitoring at Redwood Oil Service Station #102, located at 7716 Old Redwood Highway in Cotati, California (Figure 1, Appendix A). On November 9, 2005, ECM personnel visited the site. Ground water elevations were measured and ground water samples were collected from ten monitoring wells (MW-1A through MW-6, MW-7A, MW-7B, MW-8A, and MW-8B), in accordance with the site monitoring program. The well locations are provided on Figure 2 (Appendix A).

Ground water levels were measured in each of the wells. Free-phase hydrocarbons were not observed in any of the wells. Wellheads and well vaults were observed to be in good condition. Water level data is provided in Table 1 (Appendix B). Ground water monitoring was conducted concurrently at 7675 Old Redwood Highway. Ground water elevation data for the adjacent site at 7675 Old Redwood Highway is included in Table 4 (Appendix B).¹ A ground water elevation contour map is included as Figure 2 (Appendix A).

The ground water samples were forwarded under chain of custody record to Entech Analytical Labs of Santa Clara, California for analysis. Analytical results for ground water are included in Tables 2 and 3 (Appendix B). Ground water samples were collected in accordance with ECM Standard Operating Procedure - Ground Water Sampling (Appendix E). The chain of custody document and laboratory analytical reports are included in Appendix C. The water sampling data sheets are included in Appendix D. Purge water and decon rinseate were transported to an ROC holding tank for appropriate disposal.

¹

Ground water elevation data for the 7675 Old Redwood Highway site was provided by Cambria Environmental in an e-mail to ECM Group, December 2, 2005.

Wells MW-1A, MW-2A, and MW-3 represent the most impacted areas of the site. Concentrations of gasoline, BTEX compounds, and the oxygenates TBA and MTBE have consistently been moderate to high in wells MW-1A through MW-3. Concentrations of gasoline and BTEX compounds have decreased significantly in MW-1A. Results from this sampling event were consistent with this trend. A high concentration of TBA was detected in the sample from MW-1A at a level consistent with previous sample results for MW-1A.

High concentrations of gasoline, BTEX compounds, and the oxygenates TBA and MTBE were detected in the samples from wells MW-2A and MW-3. Concentrations were consistent with historical analytical results for samples from MW-2A and MW-3. MW-3 represents the area of the site that is currently most impacted.

Wells MW-4, MW-5, and MW-6 are located off site. Contaminant concentrations have consistently been low or below detection limits for all contaminants of concern in samples from wells MW-4 through MW-6. Analytical results from this sampling event were consistent with results from prior sampling events for samples from wells. BTEX compounds were detected at concentrations below 10 ppb in the samples from each well. No TPH(G) or fuel oxygenates were detected in the samples collected from wells MW-4 through MW-6.

Wells MW-7A and MW-8A were installed in April, 2005 to monitor groundwater at approximately 40-55 ft bgs. Wells MW-7B and MW-8B were installed in April, 2005 to monitor groundwater at approximately 60-75 ft bgs. Wells MW-7A and MW-7B are nested, and wells MW-8A and MW-8B are nested, in order to evaluate the vertical extent of contamination at the site.

Samples from MW-7A have contained high levels of contamination, consistent with other on-site monitoring wells. High concentrations of the oxygenates MTBE and TBA were detected in the sample from this sampling event. Detection limits were raised for other contaminants due to the high concentrations of MTBE and TBA present in the sample. No other contaminants were detected at the increased detection limits in the sample from MW-7A. The sample from MW-7B contained low concentrations of TPH(G), BTEX compounds, MTBE and TBA. The concentrations in MW-7B were significantly lower than concentrations in sample from well MW-7A.

The sample collected from well MW-8A during this event contained low concentrations of TPH(G), BTEX compounds, and MTBE. Concentrations were consistent with concentrations from previous samples collected from MW-8A. The sample from well MW-8B contained lower concentrations of BTEX compounds than the sample from MW-8A. No TPH(G) or fuel oxygenates were detected in the sample at increased detection limits.

The next sampling event at this site is scheduled for February, 2006.

Thank you for the opportunity to provide environmental services to Redwood Oil Company.
Please call if you have any questions.

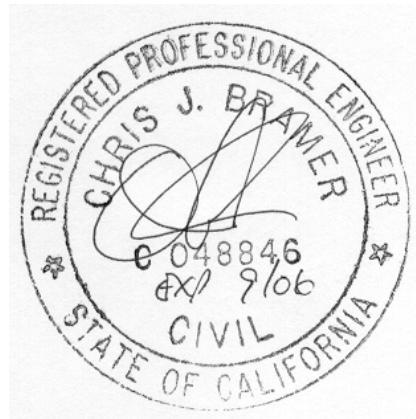
Sincerely,
ECM Group



David Hazard
Environmental Scientist



Chris Bramer
Professional Engineer #C048846



- Appendices:
- A - Figures
 - B - Tables
 - C - Chain of Custody and Laboratory Analytical Report
 - D - Water Sampling Data Sheets
 - E - Standard Operating Procedure

cc: Darcy Bering, Sonoma County Department of Health Services

APPENDIX A

FIGURES

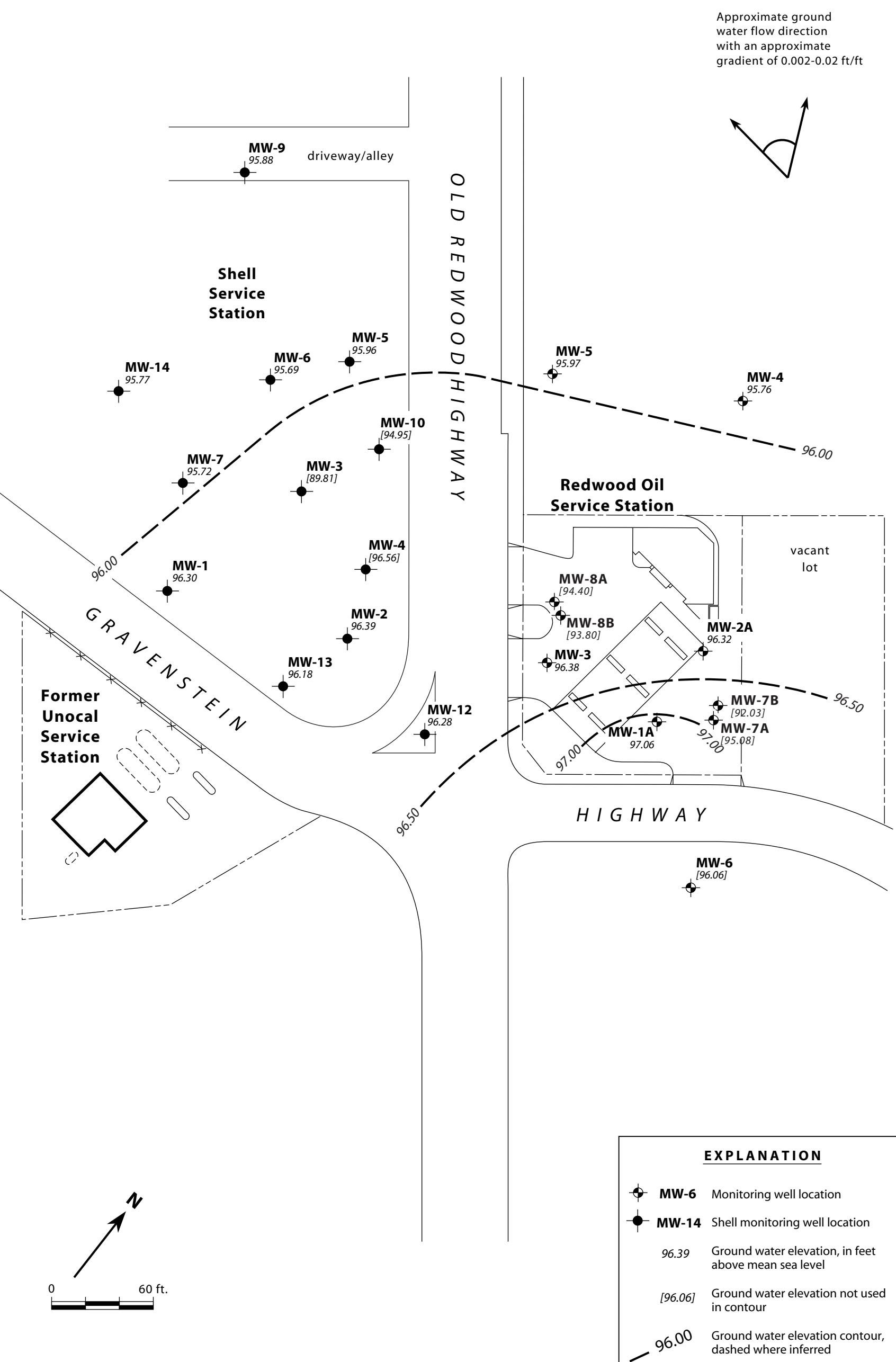


Figure 2. Monitoring Well Locations and Ground Water Elevation Contour Map - November 9, 2005 - Redwood Oil Service Station #102, 7716 Old Redwood, Cotati, California

APPENDIX B

TABLES

Table 1. Water Level Data Well Construction Details - Redwood Oil Service Station #102 7716 Old Redwood Highway, Cotati, California

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-1	9/26/1991	15.89	101.59	85.70	0.00	10 - 25	8 - 25	0 - 8	
	12/19/1991	18.30		83.29	0.00				
	3/16/1992	7.61		93.98	0.00				
	6/24/1992	9.27		92.32	0.00				
	9/23/1992	14.16		87.43	0.00				
	12/18/1992	9.31		92.28	0.00				
	3/22/1993	4.60		96.99	0.00				
	6/22/1993	8.50		93.09	0.00				
	9/24/1993	10.65		90.94	0.00				
	12/28/1993	9.66		91.93	0.00				
	3/25/1994	8.16		93.43	0.00				
	6/20/1994	9.06		92.53	0.00				
	9/8/1994	10.35		91.24	0.00				
	12/12/1994	8.44		93.15	0.00				
	3/15/1995	3.95		97.64	0.00				
	7/6/1995	6.93		94.66	0.00				
	9/19/1995	9.39		92.20	0.00				
	12/20/1995	12.70		88.89	0.00				
	3/28/1996	6.39		95.20	0.00				
	6/24/1996	9.36		93.75	1.90				Note 1: GWE corrected for the presence of free phase hydrocarbons.
	9/26/1996	12.88		91.93	4.02				See Note 1
	12/31/1996	4.51		97.26	0.22				See Note 1
	3/18/1997	6.84		94.77	0.02				See Note 1
	6/30/1997	9.33		92.26	trace				
	9/26/1997	11.25		90.62	0.35				See Note 1
	12/10/1997	5.96		95.72	0.11				See Note 1
	3/9/1998	3.79		97.80	0.00				
	6/16/1998	7.00		94.59	0.00				
	9/14/1998	9.22		92.37	0.00				
	12/15/1998	7.30		94.32	0.04				See Note 1
	3/24/1999	5.65		95.94	0.00				
	6/11/1999	8.10		93.49	0.00				
	9/9/1999	—		—	---				Well damaged during UST removal.

Table 1. Water Level Data Well Construction Details - Redwood Oil Service Station #102 7716 Old Redwood Highway, Cotati, California

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-1A	3/26/2001	5.93	101.45	95.52	0.00	5 - 20	4 - 20	0 - 4	
	6/19/2001	6.75		94.70	0.00				
	9/7/2001	10.47		90.98	0.00				
	12/4/2001	6.41		95.04	0.00				
	2/26/2002	5.62	103.85	98.23	0.00				Monitoring well surveyed for EDF compliance, November 5, 2001.
	5/17/2002	6.52		97.33	0.00				
	8/29/2002	9.47		94.38	0.00				
	11/26/2002	7.07		96.78	0.00				
	2/20/2003	4.92		98.93	0.00				
	5/23/2003	6.76		97.09	0.00				
	8/20/2003	8.66		95.19	0.00				
	11/20/2003	7.15		96.70	0.00				
	2/23/2004	5.67		98.18	0.00				
	5/12/2004	6.02		97.83	0.00				
	8/23/2004	8.64		95.21	0.00				
	11/10/2004	6.80		97.05	0.00				
	2/22/2005	3.92		99.93	0.00				
	5/11/2005	4.75		99.10	0.00				
	8/11/2005	6.29		97.56	0.00				
	11/9/2005	6.79		97.06	0.00				
MW-2	9/26/1991	15.90	101.59	85.69	0.00	10 - 25	8 - 25	0 - 8	
	12/19/1991	18.19		83.40	0.00				
	3/16/1992	7.91		93.68	0.00				
	6/24/1992	9.47		92.12	0.00				
	9/23/1992	14.41		87.18	0.00				
	12/18/1992	10.31		91.28	0.00				
	3/22/1993	6.48		95.11	0.00				
	6/22/1993	7.61		93.98	0.00				
	9/24/1993	10.82		90.77	0.00				
	12/28/1993	10.24		91.35	0.00				
	3/25/1994	7.85		93.74	0.00				
	6/20/1994	8.94		92.65	0.00				

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Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-2	9/8/1994	10.62	101.59	90.97	0.00	10 - 25	8 - 25	0 - 8	
	12/12/1994	8.80		92.79	0.00				
	3/15/1995	4.07		97.52	0.00				
	7/6/1995	7.25		94.34	0.00				
	9/19/1995	9.30		92.29	0.00				
	12/20/1995	8.81		92.78	0.00				
	3/28/1996	6.34		95.25	0.00				
	6/24/1996	7.64		93.95	0.00				
	9/26/1996	13.07		91.50	3.72				See Note 1
	12/31/1996	5.79		95.95	0.19				See Note 1
	3/18/1997	7.14		94.56	0.14				See Note 1
	6/30/1997	9.85		92.43	0.86				See Note 1
	9/26/1997	11.83		90.66	1.12				See Note 1
	12/10/1997	7.71		94.30	0.52				See Note 1
	3/9/1998	4.88		96.71	0.00				
	6/16/1998	6.63		94.98	0.03				See Note 1
	9/14/1998	9.96		91.64	0.01				See Note 1
	12/15/1998	9.63		92.86	1.13				See Note 1
	3/24/1999	6.25		95.36	0.02				See Note 1
	6/11/1999	7.53		94.08	0.02				See Note 1
	9/9/1999	9.51		92.28	0.25				See Note 1
	3/21/2000	—		—	---				Well abandoned on January 24, 2000.
MW-2A	3/26/2001	7.17	102.00	94.83	0.00	5 - 20	4 - 20	0 - 4	
	6/19/2001	8.75		93.25	0.00				
	9/7/2001	7.04		94.96	0.00				
	12/4/2001	8.75		93.25	0.00				
	2/26/2002	6.10	104.40	98.30	0.00				Monitoring well surveyed for EDF compliance, November 5, 2001.
	5/17/2002	7.88		96.52	0.00				
	8/29/2002	6.85		97.55	0.00				
	11/26/2002	9.49		94.91	0.00				
	2/20/2003	5.85		98.55	0.00				
	5/23/2003	5.42		98.98	0.00				

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Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-2A	8/20/2003	6.84	104.40	97.56	0.00	5 - 20	4 - 20	0 - 4	
	11/20/2003	10.08		94.32	0.00				
	2/23/2004	3.74		100.66	0.00				
	5/12/2004	7.37		97.03	0.00				
	8/23/2004	6.89		97.51	0.00				
	11/10/2004	8.48		95.92	0.00				
	2/22/2005	5.57		98.83	0.00				
	5/11/2005	6.74		97.66	0.00				
	8/11/2005	7.47		96.93	0.00				
	11/9/2005	8.08		96.32	0.00				
MW-3	9/26/1991	13.88	101.13	87.25	0.00	10 - 25	8 - 25	0 - 8	
	12/19/1991	16.04		85.09	0.00				
	3/16/1992	7.14		93.99	0.00				
	6/24/1992	8.25		92.88	0.00				
	9/23/1992	12.46		88.67	0.00				
	12/18/1992	9.25		91.88	0.00				
	3/22/1993	6.02		95.11	0.00				
	6/22/1993	7.00		94.13	0.00				
	9/24/1993	9.36		91.77	0.00				
	12/28/1993	8.99		92.14	0.00				
	3/25/1994	6.96		94.17	0.00				
	6/20/1994	7.83		93.30	0.00				
	9/8/1994	9.11		92.02	0.00				
	12/12/1994	7.75		93.38	0.00				
	3/15/1995	3.62		97.51	0.00				
	7/6/1995	6.63		94.50	0.00				
	9/19/1995	8.31		92.82	0.00				
	12/20/1995	7.70		93.43	0.00				
	3/28/1996	5.77		95.36	0.00				
	6/24/1996	6.81		94.32	0.00				
	9/26/1996	8.90		92.23	0.00				
	12/31/1996	5.16		95.97	0.00				
	3/18/1997	6.22		94.91	0.00				

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Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-3	6/30/1997	8.01	101.13	93.12	0.00	10 - 25	8 - 25	0 - 8	
	9/26/1997	9.33		91.80	0.00				
	12/10/1997	6.64		94.49	0.00				
	3/9/1998	4.53		96.60	0.00				
	6/16/1998	6.74		94.39	0.00				
	9/14/1998	7.34		93.79	0.00				
	12/15/1998	5.60		95.53	0.00				
	3/24/1999	4.86		96.27	0.00				
	6/11/1999	6.50	100.87	94.63	0.00				
	9/9/1999	7.91		93.22	0.00				
	3/21/2000	5.58		95.55	0.00				
	10/2/2000	8.11		93.02	0.00				
	3/26/2001	5.80	103.27	95.07	0.00				Monitoring well surveyed for EDF compliance, November 5, 2001.
	6/19/2001	7.17		93.70	0.00				
	9/7/2001	8.80		92.07	0.00				
	12/4/2001	7.40		93.47	0.00				
	2/26/2002	4.97		98.30	0.00				
	5/17/2002	6.46		96.81	0.00				
	8/29/2002	7.95		95.32	0.00				
	11/26/2002	8.70		94.57	0.00				
	2/20/2003	4.79		98.48	0.00				
	5/23/2003	5.39		97.88	0.00				
	8/20/2003	7.35		95.92	0.00				
	11/20/2003	8.55		94.72	0.00				
	2/23/2004	4.20		99.07	0.00				
	5/12/2004	6.05		97.22	0.00				
	8/23/2004	7.34		95.93	0.00				
	11/10/2004	7.47		95.80	0.00				
	2/22/2005	4.31		98.96	0.00				
	5/11/2005	4.60		98.67	0.00				
	8/11/2005	6.06		97.21	0.00				
	11/9/2005	6.89		96.38	0.00				

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Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-4	5/4/2000	4.02	99.49	---	0.00	5 - 25	4 - 25	0 - 4	
	10/2/2000	8.18		---	0.00				
	3/26/2001	4.28		95.21	0.00				
	6/19/2001	6.97		92.52	0.00				
	9/7/2001	9.51		89.98	0.00				
	12/4/2001	6.75		92.74	0.00				
	2/26/2002	3.45	101.89	98.44	0.00				Monitoring well surveyed for EDF compliance, November 5, 2001.
	5/17/2002	5.35		96.54	0.00				
	8/29/2002	8.41		93.48	0.00				
	11/26/2002	9.47		92.42	0.00				
	2/20/2003	3.65		98.24	0.00				
	5/23/2003	4.27		97.62	0.00				
	8/20/2003	7.40		94.49	0.00				
	11/20/2003	9.00		92.89	0.00				
	2/23/2004	2.32		99.57	0.00				
	5/12/2004	4.86		97.03	0.00				
	8/23/2004	7.34		94.55	0.00				
	11/10/2004	6.62		95.27	0.00				
	2/22/2005	1.37		100.52	0.00				
	5/11/2005	2.48		99.41	0.00				
	8/11/2005	5.86		96.03	0.00				
	11/9/2005	6.13		95.76	0.00				
MW-5	11/26/2002	8.81	102.41	93.60	0.00	5 - 25	4 - 25	0 - 4	Monitoring well surveyed for EDF compliance, November 16, 2002.
	2/20/2003	3.45		98.96	0.00				
	5/23/2003	4.02		98.39	0.00				
	8/20/2003	—		—	---				Well inaccessible.
	11/20/2003	8.48		93.93	0.00				
	2/23/2004	2.88		99.53	0.00				
	5/12/2004	5.30		97.11	0.00				
	8/23/2004	7.20		95.21	0.00				
	11/10/2004	6.46		95.95	0.00				

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Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-5	2/22/2005	2.84	102.41	99.57	0.00	5 - 25	4 - 25	0 - 4	
	5/11/2005	4.35		98.06	0.00				
	8/11/2005	5.76		96.65	0.00				
	11/9/2005	6.44		95.97	0.00				
MW-6	11/26/2002	10.48	104.26	93.78	0.00	5 - 25	4 - 25	0 - 4	Monitoring well surveyed for EDF compliance, on November 16, 2002.
	2/20/2003	7.32		96.94	0.00				
	5/23/2003	7.65		96.61	0.00				
	8/20/2003	8.49		95.77	0.00				
	11/20/2003	9.88		94.38	0.00				
	2/23/2004	7.01		97.25	0.00				
	5/12/2004	7.90		96.36	0.00				
	8/23/2004	8.61		95.65	0.00				
	11/10/2004	8.85		95.41	0.00				
	2/22/2005	6.42		97.84	0.00				
	5/11/2005	7.64		96.62	0.00				
	8/11/2005	7.80		96.46	0.00				
	11/9/2005	8.20		96.06	0.00				
MW-7A	4/27/2005	6.98	104.20	97.22	0.00	45 - 55	44 - 55	0 - 44	
	8/11/2005	7.89		96.31	0.00				
	11/9/2005	9.12		95.08	0.00				
MW-7B	4/27/2005	9.32	104.27	94.95	0.00	67 - 77	66 - 77	0 - 66	
	8/11/2005	10.22		94.05	0.00				
	11/9/2005	12.24		92.03	0.00				

Table 1. Water Level Data Well Construction Details - Redwood Oil Service Station #102 7716 Old Redwood Highway, Cotati, California

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Product Thickness (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval	Notes
MW-8A	4/27/2005	11.97	103.55	91.58	0.00	42 - 52	41 - 52	0 - 41	
	8/11/2005	6.44		97.11	0.00				
	11/9/2005	9.15		94.40	0.00				
<hr/>									
MW-8B	4/27/2005	8.69	103.70	95.01	0.00	62 - 72	61 - 73	0 - 61	
	8/11/2005	7.29		96.41	0.00				
	11/9/2005	9.90		93.80	0.00				

Explanation:

DTW Depth to Water
 ft feet
 TOC Top of Casing
 msl Mean Sea Level
 GWE Ground Water Elevation

Table 2. Analytic Results for Ground Water - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California

Well ID	Date Sampled	TPPH/TPH (G)	Benzene	Toluene	Ethyl benzene	Xylenes	Notes
			<----- ppb ----->				
MW-1	9/26/1991	50,000	17,000	3,600	1,200	4,700	Analyzed for Or. Pb. No Or. Pb was detected.
	12/19/1991	34,000	17,000	4,000	2,500	4,400	
	3/16/1992	77,000	16,000	23,000	2,900	13,000	
	6/24/1992	78,000	19,000	19,000	3,100	12,000	
	9/23/1992	110,000	25,000	31,000	2,400	16,000	
	12/18/1992	68,000	7,700	8,300	480	7,000	
	3/22/1993	3,600	150	250	46	310	
	6/22/1993	75,000	12,000	11,000	2,500	10,000	
	9/24/1993	680	180	37	10	20	
	3/25/1994	89,000	13,000	12,000	1,600	5,800	
	9/8/1994	570,000	18,000	11,000	2,000	4,200	
	3/15/1995	85,000	12,000	17,000	2,000	9,400	Sample was flagged by lab. See laboratory analytical reports.
	9/19/1995	100,000	13,000	9,300	2,800	12,000	
	3/28/1996	---	---	---	---	---	Separate phase product present in well.
	9/26/1996	---	---	---	---	---	Separate phase product present in well.
	3/18/1997	---	---	---	---	---	Separate phase product present in well.
	9/26/1997	---	---	---	---	---	Separate phase product present in well.
	3/9/1998	270,000	15,000	32,000	4,100	20,000	
	9/14/1998	1,700,000	20,000	59,000	19,000	130,000	
	3/25/1999	210,000	24,000	35,000	5,900	42,000	Analyzed for HVOCs. HVOCs not detected
	9/9/1999	---	---	---	---	---	Well damaged during UST excavation. Well was abandoned on February 11, 2000.
MW-1A	3/26/2001	28,000	200	780	290	3,100	
	6/19/2001	3,300	38	10	67	20	
	9/7/2001	45,000	3,600	4,800	2,900	8,300	
	12/4/2001	4,500	240	<25	62	53	
	2/26/2002	<2,500	150	<25	<25	<25	
	5/17/2002	600	180	13	22	16	
	8/29/2002	29,000	1,800	1,200	1,900	2,600	Sample was flagged by lab. See laboratory analytical reports.
	11/26/2002	320	4	4	1	5	
	2/20/2003	<250	140	10	9	10	
	5/23/2003	13,000	690	380	860	1,000	
	8/20/2003	4,200	840	110	730	235	
	11/20/2003	980	170	12	22	15	

Table 2. Analytic Results for Ground Water - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California

Well ID	Date Sampled	TPPH/TPH (G)	Benzene	Toluene	Ethyl benzene	Xylenes	Notes
			<----- ppb ----->				
MW-1A	5/12/2004	160	<2.5	<2.5	<2.5	<5	
	11/10/2004	170	<2.5	<2.5	<2.5	<5	
	5/11/2005	260	9.0	25	14	25	
	11/9/2005	<500	5.1	6.7	<5.0	<5.0	
MW-2	9/26/1991	300	59	0.6	<0.5	4.1	Analyzed for oil & grease, Or. Pb and HVOCs. No O&G, Or. Pb, or HVOCs were detected.
	12/19/1991	2,400	1,200	46	11	47	
	3/16/1992	4,200	2,500	<0.5	100	45	
	6/24/1992	5,300	2,600	<0.5	120	53	
	9/23/1992	530	190	0.9	2.9	<0.5	
	12/18/1992	3,100	1,600	5	40	17	
	3/22/1993	1,400	1,100	2.1	24	5.6	
	6/22/1993	850	450	4.8	16	4.2	
	9/24/1993	68,000	14,000	11,000	2,300	8,400	
	3/25/1994	1,500	510	94	30	40	
	9/8/1994	1,400	400	130	26	45	
	3/15/1995	5,900	2,500	5,300	160	7,200	Sample was flagged by lab. See laboratory analytical reports.
	9/19/1995	12,000	2,800	150	130	520	
	3/28/1996	24,000	3,000	3,400	490	2,100	
	9/26/1996	---	---	---	---	---	Separate phase product present in well.
	3/18/1997	---	---	---	---	---	Separate phase product present in well.
	9/26/1997	---	---	---	---	---	Separate phase product present in well.
	3/9/1998	73,000	7,300	5,400	770	3,100	
	9/14/1998	---	---	---	---	---	Separate phase product present in well.
	3/25/1999	---	---	---	---	---	Separate phase product present in well.
	9/9/1999	---	---	---	---	---	Separate phase product present in well. Well MW-2 was abandoned on January 24, 2000.
MW-2A	3/26/2001	110,000	8,000	30,000	2,900	17,000	
	6/19/2001	80,000	4,100	16,000	3,400	15,000	
	9/7/2001	1,800	35	14	16	32	
	12/4/2001	29,000	2,400	2,800	2,300	3,400	
	2/26/2002	60,000	3,700	6,800	3,100	7,300	
	5/17/2002	39,000	2,400	4,200	2,900	5,300	

Table 2. Analytic Results for Ground Water - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California

Well ID	Date Sampled	TPPH/TPH (G)	Benzene	Toluene	Ethyl benzene	Xylenes	Notes
		<----- ppb ----->					
MW-2A	8/29/2002	2,500	190	16	21	<25	Sample was flagged by lab. See laboratory analytical reports.
	11/26/2002	8,400	600	170	1,200	561	
	2/20/2003	9,200	760	930	1,300	1,810	
	5/23/2003	1,100	57	9	9	9	
	8/20/2003	140	2	<1	<1	1	
	11/20/2003	9,900	630	110	990	290	
	5/12/2004	5,900	160	59	350	260	
	11/10/2004	11,000	630	350	930	1,000	
	5/11/2005	5,400	160	150	380	460	
	11/9/2005	7,100	400	110	770	1,100	
MW-3	9/26/1991	510	52	5.5	1.8	17	Analyzed for Or. Pb. No Or. Pb was detected.
	12/19/1991	9,400	3,700	310	140	280	
	3/16/1992	8,200	4,400	320	240	720	
	6/24/1992	21,000	11,000	770	730	2,500	
	9/23/1992	22,000	9,100	920	720	1,900	
	12/18/1992	9,600	2,600	73	180	130	
	3/22/1993	62,000	35,000	3,900	2,300	12,000	
	6/22/1993	32,000	13,000	940	1,100	3,800	
	9/24/1993	13,000	5,500	240	420	1,300	
	3/25/1994	24,000	11,000	530	610	2,300	
	9/8/1994	22,000	7,700	170	590	1,600	
	3/15/1995	110,000	33,000	2,800	2,000	8,000	Sample was flagged by lab. See laboratory analytical reports.
	9/19/1995	300,000	19,000	590	1,300	3,200	
	3/28/1996	55,000	19,000	420	1,600	3,000	
	9/26/1996	25,000	7,200	26	480	340	
	3/18/1997	36,000	14,000	240	950	1,000	
	9/26/1997	28,000	11,000	42	810	570	
	3/9/1998	71,000	28,000	580	1,800	3,200	
	9/14/1998	49,000	27,000	400	<100	1,700	
	3/25/1999	85,000	25,000	370	2,300	2,800	Samples were analyzed for HVOCs. HVOCs were not detected
	9/9/1999	53,000	29,000	<250	2,000	870	
	3/21/2000	160,000	12,000	<50	2,000	1,700	
	10/2/2000	100,000	31,000	<50	1,600	1,300	
	3/26/2001	51,000	22,000	55	540	130	

Table 2. Analytic Results for Ground Water - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California

Well ID	Date Sampled	TPPH/TPH (G)	Benzene	Toluene	Ethyl benzene	Xylenes	Notes
			<----- ppb ----->				
MW-3	6/19/2001	73,000	27,000	<250	1,600	730	
	9/7/2001	53,000	17,000	<250	1,200	<250	
	12/4/2001	170,000	34,000	<1,250	2,900	<1,250	
	2/26/2002	96,000	30,000	<500	1,700	<500	
	5/17/2002	48,000	29,000	<100	2,600	670	
	8/29/2002	93,000	44,000	<500	2,500	<1,000	Sample was flagged by lab. See laboratory analytical reports.
	11/26/2002	61,000	40,000	94	3,900	960	
	2/20/2003	36,000	24,000	67	1,500	137	
	5/23/2003	52,000	23,000	53	2,200	316	
	8/20/2003	33,000	24,000	38	1,100	110	
	11/20/2003	86,000	22,000	<500	2,000	<1,000	
	5/12/2004	59,000	26,000	<250	2,400	<500	
	11/10/2004	42,000	24,000	<200	690	<400	
	5/11/2005	42,000	25,000	<250	970	<250	TPH(G) value is result of MTBE and Benzene within TPH(G) range.
	11/9/2005	35,000	27,000	<250	1,100	260	
MW-4	5/4/2000	<50	<0.5	<0.5	<0.5	<0.5	
	10/2/2000	<50	<0.5	<0.5	<0.5	<0.5	
	3/26/2001	<50	<0.5	<0.5	<0.5	<0.5	
	6/19/2001	<50	<0.5	0.84	<0.5	<0.5	
	2/26/2002	<50	2.7	0.83	0.58	0.57	
	5/24/2002	52	5.4	6.8	2	7.1	
	8/29/2002	78	9.1	5.9	1.5	6.5	
	11/26/2002	<50	3	5	1	5	
	2/20/2003	<50	8	10	1	8	
	5/23/2003	170	3	5	<1	2	
	8/20/2003	<50	4	<1	<1	1	
	11/20/2003	64	3.9	9.8	1.4	7.2	
	5/12/2004	<25	<0.5	<0.5	<0.5	<1	
	11/10/2004	<25	<0.5	0.62	<0.5	<1	
	5/11/2005	82	3.7	23	3.6	22	
	11/9/2005	<50	3.0	4.4	0.81	5.8	

Table 2. Analytic Results for Ground Water - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California

Well ID	Date Sampled	TPPH/TPH (G)	Benzene	Toluene	Ethyl benzene	Xylenes	Notes
		<----- ppb ----->					
MW-5	11/26/2002	50	4	6	1	7	
	2/20/2003	52	15	14	2	11	
	5/23/2003	75	3	5	<1	2	
	8/20/2003	—	—	—	—	---	
	11/20/2003	120	19	11	5.3	8.9	
	2/23/2004	120	6.5	16	2.2	15	
	5/12/2004	<25	<0.5	<0.5	<0.5	<1	
	8/23/2004	<25	<0.5	<0.5	<0.5	<1	
	11/10/2004	<25	<0.5	0.57	<0.5	<1	
	2/22/2005	<50	0.5	<0.5	<0.5	<0.5	
	5/11/2005	90	4.9	30	4.2	26	
	8/11/2005	130	5.9	22	3.3	26	
	11/9/2005	<50	4.0	5.0	0.91	6.5	
MW-6	11/26/2002	76	8	10	2	9	
	2/20/2003	80	29	25	3	17	
	5/23/2003	140	8	10	<1	5	
	8/20/2003	<50	5	1	<1	2	
	11/20/2003	140	13	22	2.4	13	
	2/23/2004	180	13	26	3.2	21	
	5/12/2004	<25	<0.5	<0.5	<0.5	<1	
	8/23/2004	<25	<0.5	<0.5	<0.5	<1	
	11/10/2004	<25	<0.5	0.74	<0.5	<1	
	2/22/2005	<50	0.88	<0.5	<0.5	<0.5	
	5/11/2005	150	12	57	6.5	38	
	8/11/2005	200	11	33	4.6	36	
	11/9/2005	<50	7.5	7.6	1.2	8.4	

Table 2. Analytic Results for Ground Water - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California

Well ID	Date Sampled	TPPH/TPH (G)	Benzene	Toluene	Ethyl benzene	Xylenes	Notes
		<----- ppb ----->					
MW-7A	4/27/2005	39,000	<250	<250	<250	<250	
	8/11/2005	<50,000	<500	<500	<500	<500	Detetion limits raised due to the high concentration of MTBE
	11/9/2005	<12,000	<120	<120	<120	<120	
MW-7B	4/27/2005	28	0.87	1.4	2.1	8.9	
	8/11/2005	200	8.4	30	4.6	36	
	11/9/2005	76	42	6.1	4.6	9.4	
MW-8A	4/27/2005	320	7.1	4.7	18	70	
	8/11/2005	600	25	47	28	130	
	11/9/2005	260	87	12	19	57	
MW-8B	4/27/2005	38	2.1	7.6	1.5	8.9	
	8/11/2005	180	7.6	26	4.3	34	
	11/9/2005	<250	150	9.1	10	13	

Explanation:

TPPH/ TPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline/ Total Petroleum Hydrocarbons as Gasoline

ppb = parts per billion

--- = Not analyzed/Not applicable

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<-----ppb----->					
MW-1	9/14/1998	<250	320,000	<250	<250	<50	
	3/25/1999	---	320,000	---	---	---	
	9/9/1999	---	---	---	---	---	Separate phase product present in well.
MW-1A	3/26/2001	800	1,400	<5.0	<5.0	<5.0	
	6/19/2001	<1,000	6,600	<250	<250	<250	
	9/7/2001	<2,000	6,400	<500	<500	<500	
	12/4/2001	<1,000	4,300	<250	<250	<250	
	2/26/2002	<2,000	3,400	<500	<500	<500	
	5/17/2002	<2,000	3,100	<10	<10	<10	
	8/29/2002	<1,000	4,600	<250	<250	<250	
	11/26/2002	300	4,700	<1	<1	18	
	2/20/2003	<200	1,700	<1	<1	5	
	5/23/2003	<200	850	<1	<1	2	
	8/20/2003	670	1,300	<1	<1	4	
	11/20/2003	1,400	120	<25	<25	<25	
	5/12/2004	1,200	8.2	<25	<25	<25	
	11/10/2004	1,300	8.5	<25	<25	<25	
	5/11/2005	1,200	14	<25	<25	<25	
	11/9/2005	1,200	10	<50	<50	<50	
MW-2	9/9/1999	---	---	---	---	---	Separate phase product present in well.
MW-2A	3/26/2001	1,500	2,800	<500	<500	<500	
	6/19/2001	<1,000	4,200	<250	<250	<250	
	9/7/2001	<2,000	5,000	<500	<500	<500	
	12/4/2001	<400	3,100	<100	<100	<100	
	2/26/2002	300	2,600	<50	<50	<50	
	5/17/2002	<2,000	2,200	<10	<10	<10	
	8/29/2002	<1,000	4,600	<250	<250	<250	
	11/26/2002	210	2,000	<1	<1	6	
	2/20/2003	<200	790	<1	<1	2	
	5/23/2003	240	1,800	<1	<1	5	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<-----ppb----->					
MW-2A cont.	8/20/2003	760	2,100	<1	<1	7	
	11/20/2003	660	270	<50	<50	<50	
	5/12/2004	<200	77	<100	<100	<100	
	11/10/2004	820	51	<100	<100	<100	
	5/11/2005	260	31	<100	<100	<100	
	11/9/2005	1,000	26	<100	<100	<100	
MW-3	9/14/1998	<5	<1	<5	<5	<1	
	3/25/1999	---	120,000	---	---	---	
	9/9/1999	---	74,000	---	---	---	
	3/21/2000	---	33,000	---	---	---	
	10/2/2000	---	75,000	---	---	---	
	3/26/2001	3,900	28,000	<500	<500	<500	
	6/19/2001	<10,000	60,000	<2,500	<2,500	<2,500	
	9/7/2001	<10,000	47,000	<2,500	<2,500	<2,500	
	12/4/2001	<10,000	47,000	<2,500	<2,500	<2,500	
	2/26/2002	<10,000	41,000	<2,500	<2,500	<2,500	
	5/17/2002	<20,000	30,000	<100	<100	<100	
	8/29/2002	<10,000	33,000	<2,500	<2,500	<2,500	
	11/26/2002	990	34,000	<1	<1	120	
	2/20/2003	1,200	27,000	<1	<1	110	
	5/23/2003	3,400	23,000	<1	<1	83	
	8/20/2003	12,000	49,000	<10	<10	110	
	11/20/03	<4,000	18,000	<2,000	<2,000	<2,000	
	5/12/2004	5,200	40,000	<2,500	<2,500	<2,500	
	11/10/2004	5,000	12,000	<2,000	<2,000	<2,000	
	5/11/2005	9,000	28,000	<2,500	<2,500	<2,500	
	11/9/2005	13,000	14,000	<2,500	<2,500	<2,500	
MW-4	5/4/2000	---	<2.0	---	---	---	
	10/2/2000	---	<0.5	---	---	---	
	3/26/2001	<10.0	<2.0	<5.0	<5.0	<5.0	
	6/19/2001	<20	<5.0	<5.0	<5.0	<5.0	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<-----ppb----->					
MW-4 cont.	2/26/2002	<20	5.3	<5	<5	<5	
	5/24/2002	<20	<5	<5	<5	<5	
	8/29/2002	<20	38	<5	<5	<5	
	11/26/2002	<200	37	<1	<1	<1	
	2/20/2003	<200	<1	<1	<1	<1	
	5/23/2003	<200	<1	<1	<1	<1	
	8/20/2003	<200	<1	<1	<1	<1	
	11/20/2003	<10	1.6	<5	<5	<5	
	5/12/2004	<10	<1	<5	<5	<5	
	11/10/2004	<10	<1	<5	<5	<5	
	5/11/2005	<10	<1	<5	<5	<5	
	11/9/2005	<10	<1.0	<5.0	<5.0	<5.0	
MW-5	11/26/2002	<200	1	<1	<1	<1	
	2/20/2003	<200	<1	<1	<1	<1	
	5/23/2003	<200	<1	<1	<1	<1	
	8/20/2003	—	—	—	—	---	
	11/20/2003	<10	<1	<5	<5	<5	
	2/23/2004	<10	1.4	<5	<5	<5	
	5/12/2004	<10	1.2	<5	<5	<5	
	8/23/2004	<10	<1	<5	<5	<5	
	11/10/2004	<10	<1	<5	<5	<5	
	2/22/2005	<10	<1	<5	<5	<5	
	5/11/2005	<10	1.1	<5	<5	<5	
	8/11/2005	<10	<1.0	<5.0	<5.0	<5.0	
MW-6	11/26/2002	<200	<1	<1	<1	<1	
	2/20/2003	<200	<1	<1	<1	<1	
	5/23/2003	<200	<1	<1	<1	<1	
	8/20/2003	<200	<1	<1	<1	<1	
	11/20/2003	<10	4.2	<5	<5	<5	
	2/23/2004	<10	5.8	<5	<5	<5	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station #102, 7716 Old Redwood Highway, Cotati, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<-----ppb----->					
MW-6	5/12/2004	<10	<1	<5	<5	<5	
	8/23/2004	<10	<1	<5	<5	<5	
	11/10/2004	<10	<1	<5	<5	<5	
	2/22/2005	<10	<1	<5	<5	<5	
	5/11/2005	<20	<2	<10	<10	<10	
	8/11/2005	<10	<1.0	<5.0	<5.0	<5.0	
	11/9/2005	<10	<1.0	<5.0	<5.0	<5.0	
MW-7A	4/27/2005	<5,000	24,000	<2500	<2,500	<2,500	
	8/11/2005	<10,000	29,000	<5,000	<5,000	<5,000	
	11/9/2005	13,000	16,000	<1,200	<1,200	<1,200	
MW-7B	4/27/2005	<10	12	<5	<5	<5	
	8/11/2005	<10	23	<5.0	<5.0	<5.0	
	11/9/2005	16	26	<5.0	<5.0	<5.0	
MW-8A	4/27/2005	<10	2.1	<5	<5	<5	
	8/11/2005	<10	13	<5.0	<5.0	<5.0	
	11/9/2005	<20	5.8	<10	<10	<10	
MW-8B	4/27/2005	<10	1.3	<5	<5	<5	
	8/11/2005	<10	8.6	<5.0	<5.0	<5.0	
	11/9/2005	<50	<5.0	<25	<25	<25	

Explanation:

MTBE = Methyl tertiary-butyl ether

--- = Not analyzed/Not detected

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
MW-1	2/26/2002	4.71	104.20	99.49	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	6.20		98.00	
	8/28/2002	9.52		94.68	
	2/20/2003	5.64		98.56	
	8/20/2003	8.70		95.50	
	11/20/2003	9.13		95.07	
	2/23/2004	4.87		99.33	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	8.73		95.47	
	8/23/2004	---		---	
	11/10/2004	8.37		95.83	
	2/23/2005	5.45		98.75	
	5/11/2005	4.70		99.50	
	8/22/2005	6.55		97.65	
	11/9/2005	7.90		96.30	
MW-2	2/26/2002	4.52	104.42	99.90	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	7.24		97.18	
	8/28/2002	9.06		95.36	
	2/20/2003	4.76		99.66	
	8/20/2003	8.49		95.93	
	11/20/2003	9.32		95.10	
	2/23/2004	4.45		99.97	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	7.41		97.01	
	8/23/2004	---		---	
	11/10/2004	8.08		96.34	
	2/23/2005	5.04		99.38	
	5/11/2005	4.75		99.67	
	8/22/2005	7.14		97.28	
	11/9/2005	8.03		96.39	

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
MW-3	2/26/2002	3.80	103.81	100.01	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	6.45		97.36	
	8/28/2002	8.42		95.39	
	2/20/2003	3.92		99.89	
	8/20/2003	7.80		96.01	
	11/20/2003	8.71		95.10	
	2/23/2004	4.52		99.29	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	7.98		95.83	
	8/23/2004	---		---	
	11/10/2004	7.47		96.34	
	2/23/2005	3.22		100.59	
	5/11/2005	3.68		100.13	
	8/22/2005	6.82		96.99	
	11/9/2005	14.00		89.81	
MW-4	2/26/2002	3.14	103.60	100.46	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	6.25		97.35	
	8/28/2002	8.05		95.55	
	2/20/2003	3.26		100.34	
	8/20/2003	7.54		96.06	
	11/20/2003	8.61		94.99	
	2/23/2004	2.82		100.78	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	7.48		96.12	
	8/23/2004	---		---	
	11/10/2004	7.00		96.60	
	2/23/2005	2.73		100.87	
	5/11/2005	2.87		100.73	
	8/22/2005	6.22		97.38	
	11/9/2005	7.04		96.56	

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
MW-5	2/26/2002	3.06	102.16	99.10	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	5.00		97.16	
	8/28/2002	7.51		94.65	
	2/20/2003	3.99		98.17	
	8/20/2003	6.92		95.24	
	11/20/2003	8.14		94.02	
	2/23/2004	3.75		98.41	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	6.79		95.37	
	8/23/2004	---		---	
	11/10/2004	6.32		95.84	
	2/23/2005	3.53		98.63	
	5/11/2005	3.40		98.76	
	8/22/2005	5.64		96.52	
	11/9/2005	6.20		95.96	
MW-6	2/26/2002	4.05	103.10	99.05	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	4.60		98.50	
	8/28/2002	8.25		94.85	
	2/20/2003	5.79		97.31	
	8/20/2003	7.59		95.51	
	11/20/2003	9.06		94.04	
	2/23/2004	3.96		99.14	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	7.56		95.54	
	8/23/2004	---		---	
	11/10/2004	7.41		95.69	
	2/23/2005	4.45		98.65	
	5/11/2005	4.25		98.85	
	8/22/2005	5.86		97.24	
	11/9/2005	7.41		95.69	

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
MW-7	2/26/2002	4.89	104.29	99.40	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	7.15		97.14	
	8/28/2002	9.62		94.67	
	2/20/2003	5.05		99.24	
	8/20/2003	8.81		95.48	
	11/20/2003	9.96		94.33	
	2/23/2004	4.26		100.03	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	8.85		95.44	
	8/23/2004	---		---	
	11/10/2004	8.67		95.62	
	2/23/2005	4.35		99.94	
	5/11/2005	4.77		99.52	
	8/22/2005	7.37		96.92	
	11/9/2005	8.57		95.72	
MW-9	2/26/2002	3.95	103.02	99.07	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	6.94		96.08	
	8/28/2002	8.49		94.53	
	2/20/2003	4.25		98.77	
	8/20/2003	7.79		95.23	
	11/20/2003	9.00		94.02	
	2/23/2004	3.61		99.41	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	7.73		95.29	
	8/23/2004	---		---	
	11/10/2004	7.46		95.56	
	2/23/2005	4.05		98.67	
	5/11/2005	3.90		99.12	
	8/22/2005	6.67		96.35	
	11/9/2005	7.14		95.88	

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
MW-10	2/26/2002	3.98	103.45	99.47	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	5.92		97.53	
	8/28/2002	7.36		96.09	
	2/20/2003	4.09		99.36	
	8/20/2003	7.50		95.95	
	11/20/2003	8.86		94.59	
	2/23/2004	3.50		99.95	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	8.47		94.98	
	8/23/2004	---		---	
	11/10/2004	7.93		95.52	
	2/23/2005	4.47		98.98	
	5/11/2005	4.86		98.59	
	8/22/2005	7.57		95.88	
	11/9/2005	8.50		94.95	
MW-12	2/26/2002	5.69	104.38	98.69	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	7.30		97.08	
	8/28/2002	9.37		95.01	
	2/20/2003	6.59		97.79	
	8/20/2003	8.57		95.81	
	11/20/2003	10.07		94.31	
	2/23/2004	6.09	104.38	98.29	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	8.31		96.07	
	8/23/2004	---		---	
	11/10/2004	8.50		95.88	
	2/23/2005	6.56		97.82	
	5/11/2005	5.51		98.87	
	8/22/2005	7.08		97.30	
	11/9/2005	8.10		96.28	

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
MW-13	2/26/2002	6.45	106.07	99.62	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	8.93		97.14	
	8/28/2002	10.82		95.25	
	2/20/2003	6.98		99.09	
	8/20/2003	10.32		95.75	
	11/20/2003	11.18		94.89	
	2/23/2004	5.81		100.26	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	10.30		95.77	
	8/23/2004	---		---	
	11/10/2004	9.97		96.10	
	2/23/2005	5.75		100.32	
	5/11/2005	6.24		99.83	
	8/22/2005	8.88		97.19	
	11/9/2005	9.89		96.18	
MW-14	2/26/2002	4.63	103.48	98.85	TOC elevations surveyed and tied into ECM wells for EDF compliance.
	5/17/2002	6.46		97.02	
	8/28/2002	8.82		94.66	
	2/20/2003	4.35		99.13	
	8/20/2003	8.06		95.42	
	11/20/2003	9.24		94.24	
	2/23/2004	3.60		99.88	
	5/12/2004	—		---	Joint ground water sampling did not take place for this quarter.
	8/9/2004	8.08		95.40	
	8/23/2004	---		---	
	11/10/2004	8.00		95.48	
	2/23/2005	3.62		99.86	
	5/11/2005	4.07		99.41	
	8/22/2005	6.66		96.82	
	11/9/2005	7.71		95.77	

Table 4. Monitoring Well Survey Data and Depth to Ground Water - 7675 Old Redwood Highway, Cotati, California (Shell Station-Cambria Environmental site).

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Notes
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Explanation:

DTW = Depth to Water

ft = feet

TOC = Top of Casing

GWE = Ground Water Elevation

msl = Mean Sea Level

Notes:

Data received from Shell Stations environmental consultants, Cambria Environmental.

APPENDIX C

CHAIN OF CUSTODY
AND
LABORATORY ANALYTICAL REPORTS

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Jim Green
ECM Group
290 W. Channel Rd.
Benicia, CA 94510

Lab Certificate Number: 46263
Issued: 11/22/2005

Project Number: 98-516-14
Project Name: Cotati

Project Location: 455 Yolanda Ave, Santa Rosa,
CA

Global ID: T0609700248

Certificate of Analysis - Final Report

On November 11, 2005, samples were received under chain of custody for analysis.

Entech analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>	<u>Test</u>	<u>Comments</u>
Liquid	Electronic Deliverables EPA 8260B - GC/MS TPH as Gasoline by GC/MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,



Laurie Glantz-Murphy
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-001 Sample ID: MW-1A

Matrix: Liquid Sample Date: 11/9/2005 11:40 AM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	5.1		10	5.0	µg/L	N/A	N/A	11/21/2005	WM1051121
Toluene	6.7		10	5.0	µg/L	N/A	N/A	11/21/2005	WM1051121
Ethyl Benzene	ND		10	5.0	µg/L	N/A	N/A	11/21/2005	WM1051121
Xylenes, Total	ND		10	5.0	µg/L	N/A	N/A	11/21/2005	WM1051121
Methyl-t-butyl Ether	10		10	10	µg/L	N/A	N/A	11/21/2005	WM1051121
tert-Butyl Ethyl Ether	ND		10	50	µg/L	N/A	N/A	11/21/2005	WM1051121
tert-Butanol (TBA)	1200		10	100	µg/L	N/A	N/A	11/21/2005	WM1051121
Diisopropyl Ether	ND		10	50	µg/L	N/A	N/A	11/21/2005	WM1051121
tert-Amyl Methyl Ether	ND		10	50	µg/L	N/A	N/A	11/21/2005	WM1051121

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	95.1	70 - 130	Reviewed by: dba
Dibromofluoromethane	111	70 - 130	
Toluene-d8	104	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		10	500	µg/L	N/A	N/A	11/21/2005	WM1051121
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	92.1	70 - 130	Reviewed by: dba						
Dibromofluoromethane	92.4	70 - 130							
Toluene-d8	94.0	70 - 130							

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Benicia, CA 94510
Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-002 Sample ID: MW-2A

Matrix: Liquid Sample Date: 11/9/2005 11:25 AM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	400		20	10	µg/L	N/A	N/A	11/18/2005	WM1051118
Toluene	110		20	10	µg/L	N/A	N/A	11/18/2005	WM1051118
Ethyl Benzene	770		20	10	µg/L	N/A	N/A	11/18/2005	WM1051118
Xylenes, Total	1100		20	10	µg/L	N/A	N/A	11/18/2005	WM1051118
Methyl-t-butyl Ether	26		20	20	µg/L	N/A	N/A	11/18/2005	WM1051118
tert-Butyl Ethyl Ether	ND		20	100	µg/L	N/A	N/A	11/18/2005	WM1051118
tert-Butanol (TBA)	1000		20	200	µg/L	N/A	N/A	11/18/2005	WM1051118
Diisopropyl Ether	ND		20	100	µg/L	N/A	N/A	11/18/2005	WM1051118
tert-Amyl Methyl Ether	ND		20	100	µg/L	N/A	N/A	11/18/2005	WM1051118

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	95.9	70 - 130	Reviewed by: dba
Dibromofluoromethane	115	70 - 130	
Toluene-d8	103	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	7100		20	1000	µg/L	N/A	N/A	11/18/2005	WM1051118
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	92.9	70 - 130	Reviewed by: dba						
Dibromofluoromethane	95.7	70 - 130							
Toluene-d8	93.0	70 - 130							

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Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-003 Sample ID: MW-3

Matrix: Liquid Sample Date: 11/9/2005 11:55 AM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	27000		500	250	µg/L	N/A	N/A	11/18/2005	WM1051118
Toluene	ND		500	250	µg/L	N/A	N/A	11/18/2005	WM1051118
Ethyl Benzene	1100		500	250	µg/L	N/A	N/A	11/18/2005	WM1051118
Xylenes, Total	260		500	250	µg/L	N/A	N/A	11/18/2005	WM1051118
Methyl-t-butyl Ether	14000		500	500	µg/L	N/A	N/A	11/18/2005	WM1051118
tert-Butyl Ethyl Ether	ND		500	2500	µg/L	N/A	N/A	11/18/2005	WM1051118
tert-Butanol (TBA)	13000		500	5000	µg/L	N/A	N/A	11/18/2005	WM1051118
Diisopropyl Ether	ND		500	2500	µg/L	N/A	N/A	11/18/2005	WM1051118
tert-Amyl Methyl Ether	ND		500	2500	µg/L	N/A	N/A	11/18/2005	WM1051118

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	97.4	70 - 130	Reviewed by: dba
Dibromofluoromethane	115	70 - 130	
Toluene-d8	107	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	35000		500	25000	µg/L	N/A	N/A	11/18/2005	WM1051118
Surrogate	Surrogate Recovery	Control Limits (%)							Analyzed by: XBian
		94.3	70 - 130						Reviewed by: dba
Dibromofluoromethane	95.3		70 - 130						
Toluene-d8	96.7		70 - 130						

Detection Limit = Detection Limit for Reporting.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

ND = Not Detected at or above the Detection Limit.

Qual = Data Qualifier

11/22/2005 12:40:40 PM - dba

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054

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ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-004 Sample ID: MW-4 Matrix: Liquid Sample Date: 11/9/2005 11:10 AM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	3.0		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Toluene	4.4		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Ethyl Benzene	0.81		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Xylenes, Total	5.8		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	11/16/2005	WM1051116
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/16/2005	WM1051116
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	11/16/2005	WM1051116
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/16/2005	WM1051116
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/16/2005	WM1051116

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	97.7	70 - 130	Reviewed by: MaiChiTu
Dibromofluoromethane	111	70 - 130	
Toluene-d8	106	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	11/16/2005	WM1051116
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	94.6	70 - 130	Reviewed by: MaiChiTu						
Dibromofluoromethane	92.0	70 - 130							
Toluene-d8	95.9	70 - 130							

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Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-005 Sample ID: MW-5 Matrix: Liquid Sample Date: 11/9/2005 10:55 AM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	4.0		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Toluene	5.0		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Ethyl Benzene	0.91		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Xylenes, Total	6.5		1.0	0.50	µg/L	N/A	N/A	11/16/2005	WM1051116
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	11/16/2005	WM1051116
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/16/2005	WM1051116
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	11/16/2005	WM1051116
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/16/2005	WM1051116
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/16/2005	WM1051116

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	100	70 - 130	Reviewed by: MaiChiTu
Dibromofluoromethane	110	70 - 130	
Toluene-d8	106	70 - 130	

GC-MS TPH as Gasoline - GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	11/16/2005	WM1051116
Surrogate Recovery Control Limits (%) Analyzed by: XBian									
4-Bromofluorobenzene	96.9		70 - 130					Reviewed by: MaiChiTu	
Dibromofluoromethane	91.9		70 - 130						
Toluene-d8	96.0		70 - 130						

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Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-006 Sample ID: MW-6 Matrix: Liquid Sample Date: 11/9/2005 10:35 AM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	7.5		1.0	0.50	µg/L	N/A	N/A	11/20/2005	WM1051120
Toluene	7.6		1.0	0.50	µg/L	N/A	N/A	11/20/2005	WM1051120
Ethyl Benzene	1.2		1.0	0.50	µg/L	N/A	N/A	11/20/2005	WM1051120
Xylenes, Total	8.4		1.0	0.50	µg/L	N/A	N/A	11/20/2005	WM1051120
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	11/20/2005	WM1051120
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/20/2005	WM1051120

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	98.1	70 - 130	Reviewed by: dba
Dibromofluoromethane	108	70 - 130	
Toluene-d8	105	70 - 130	

GC-MS TPH as Gasoline - GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	11/20/2005	WM1051120
Surrogate Recovery Control Limits (%) Analyzed by: XBian									
4-Bromofluorobenzene	95.0		70 - 130					Reviewed by: dba	
Dibromofluoromethane	90.0		70 - 130						
Toluene-d8	95.3		70 - 130						

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Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-007 Sample ID: MW-7A

Matrix: Liquid Sample Date: 11/9/2005 1:25 PM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		250	120	µg/L	N/A	N/A	11/20/2005	WM1051120
Toluene	ND		250	120	µg/L	N/A	N/A	11/20/2005	WM1051120
Ethyl Benzene	ND		250	120	µg/L	N/A	N/A	11/20/2005	WM1051120
Xylenes, Total	ND		250	120	µg/L	N/A	N/A	11/20/2005	WM1051120
Methyl-t-butyl Ether	16000		250	250	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Butyl Ethyl Ether	ND		250	1200	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Butanol (TBA)	13000		250	2500	µg/L	N/A	N/A	11/20/2005	WM1051120
Diisopropyl Ether	ND		250	1200	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Amyl Methyl Ether	ND		250	1200	µg/L	N/A	N/A	11/20/2005	WM1051120

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	98.7	70 - 130	Reviewed by: dba
Dibromofluoromethane	109	70 - 130	
Toluene-d8	106	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		250	12000	µg/L	N/A	N/A	11/20/2005	WM1051120
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	95.6	70 - 130	Reviewed by: dba						
Dibromofluoromethane	90.6	70 - 130							
Toluene-d8	96.0	70 - 130							

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Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-008 Sample ID: MW-7B Matrix: Liquid Sample Date: 11/9/2005 1:10 PM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	42		1.0	0.50	µg/L	N/A	N/A	11/19/2005	WM1051118
Toluene	6.1		1.0	0.50	µg/L	N/A	N/A	11/19/2005	WM1051118
Ethyl Benzene	4.6		1.0	0.50	µg/L	N/A	N/A	11/19/2005	WM1051118
Xylenes, Total	9.4		1.0	0.50	µg/L	N/A	N/A	11/19/2005	WM1051118
Methyl-t-butyl Ether	26		1.0	1.0	µg/L	N/A	N/A	11/19/2005	WM1051118
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/19/2005	WM1051118
tert-Butanol (TBA)	16		1.0	10	µg/L	N/A	N/A	11/19/2005	WM1051118
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/19/2005	WM1051118
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	11/19/2005	WM1051118

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	95.2	70 - 130	Reviewed by: dba
Dibromofluoromethane	114	70 - 130	
Toluene-d8	107	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	76		1.0	50	µg/L	N/A	N/A	11/19/2005	WM1051118
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	92.2	70 - 130	Reviewed by: dba						
Dibromofluoromethane	94.7	70 - 130							
Toluene-d8	97.2	70 - 130							

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Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-009 Sample ID: MW8A

Matrix: Liquid Sample Date: 11/9/2005 12:45 PM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	87		2.0	1.0	µg/L	N/A	N/A	11/20/2005	WM1051120
Toluene	12		2.0	1.0	µg/L	N/A	N/A	11/20/2005	WM1051120
Ethyl Benzene	19		2.0	1.0	µg/L	N/A	N/A	11/20/2005	WM1051120
Xylenes, Total	57		2.0	1.0	µg/L	N/A	N/A	11/20/2005	WM1051120
Methyl-t-butyl Ether	5.8		2.0	2.0	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Butyl Ethyl Ether	ND		2.0	10	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Butanol (TBA)	ND		2.0	20	µg/L	N/A	N/A	11/20/2005	WM1051120
Diisopropyl Ether	ND		2.0	10	µg/L	N/A	N/A	11/20/2005	WM1051120
tert-Amyl Methyl Ether	ND		2.0	10	µg/L	N/A	N/A	11/20/2005	WM1051120

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	93.5	70 - 130	Reviewed by: dba
Dibromofluoromethane	104	70 - 130	
Toluene-d8	103	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	260		2.0	100	µg/L	N/A	N/A	11/20/2005	WM1051120
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	90.5	70 - 130	Reviewed by: dba						
Dibromofluoromethane	86.8	70 - 130							
Toluene-d8	93.4	70 - 130							

Detection Limit = Detection Limit for Reporting.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

ND = Not Detected at or above the Detection Limit.

Qual = Data Qualifier

11/22/2005 12:40:41 PM - dba

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Attn: Jim Green

Date Received: 11/11/2005 12:22:40 PM

Project Number: 98-516-14
Project Name: Cotati
GlobalID: T0609700248

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46263-010 Sample ID: MW-8B

Matrix: Liquid Sample Date: 11/9/2005 12:20 PM

EPA 8260B EPA 624		8260Petroleum							
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	150		5.0	2.5	µg/L	N/A	N/A	11/19/2005	WM1051118
Toluene	9.1		5.0	2.5	µg/L	N/A	N/A	11/19/2005	WM1051118
Ethyl Benzene	10		5.0	2.5	µg/L	N/A	N/A	11/19/2005	WM1051118
Xylenes, Total	13		5.0	2.5	µg/L	N/A	N/A	11/19/2005	WM1051118
Methyl-t-butyl Ether	ND		5.0	5.0	µg/L	N/A	N/A	11/19/2005	WM1051118
tert-Butyl Ethyl Ether	ND		5.0	25	µg/L	N/A	N/A	11/19/2005	WM1051118
tert-Butanol (TBA)	ND		5.0	50	µg/L	N/A	N/A	11/19/2005	WM1051118
Diisopropyl Ether	ND		5.0	25	µg/L	N/A	N/A	11/19/2005	WM1051118
tert-Amyl Methyl Ether	ND		5.0	25	µg/L	N/A	N/A	11/19/2005	WM1051118

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian
4-Bromofluorobenzene	97.1	70 - 130	Reviewed by: dba
Dibromofluoromethane	107	70 - 130	
Toluene-d8	108	70 - 130	

GC-MS									
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		5.0	250	µg/L	N/A	N/A	11/19/2005	WM1051118
TPH as Gasoline - GC-MS									
Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: XBian						
4-Bromofluorobenzene	94.1	70 - 130	Reviewed by: dba						
Dibromofluoromethane	88.9	70 - 130							
Toluene-d8	97.4	70 - 130							

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Method Blank - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051121

Validated by: dba - 11/22/05

QC Batch Analysis Date: 11/21/2005

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	91.1	70 - 130
Dibromofluoromethane	110	70 - 130
Toluene-d8	106	70 - 130

Method Blank - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051121

Validated by: dba - 11/22/05

QC Batch Analysis Date: 11/21/2005

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	88.2	70 - 130
Dibromofluoromethane	91.5	70 - 130
Toluene-d8	95.6	70 - 130

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Laboratory Control Sample / Duplicate - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051121

Reviewed by: dba - 11/22/05

QC Batch ID Analysis Date: 11/21/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	21.2	µg/L	106	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.7	µg/L	93.5	70 - 130
Toluene	<0.50	20	21.6	µg/L	108	70 - 130

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	92.9	70 - 130
Dibromofluoromethane	104	70 - 130
Toluene-d8	103	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	20.4	µg/L	102	3.8	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	19.0	µg/L	95.0	1.6	25.0	70 - 130
Toluene	<0.50	20	20.4	µg/L	102	5.7	25.0	70 - 130

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	92.9	70 - 130
Dibromofluoromethane	103	70 - 130
Toluene-d8	101	70 - 130

Laboratory Control Sample / Duplicate - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051121

Reviewed by: dba - 11/22/05

QC Batch ID Analysis Date: 11/21/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	128	µg/L	103	65 - 135

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	91.2	70 - 130
Dibromofluoromethane	85.7	70 - 130
Toluene-d8	96.7	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	128	µg/L	102	0.16	25.0	65 - 135

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	90.6	70 - 130
Dibromofluoromethane	87.1	70 - 130
Toluene-d8	97	70 - 130

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Method Blank - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051118

Validated by: dba - 11/21/05

QC Batch Analysis Date: 11/18/2005

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	98.0	70 - 130
Dibromofluoromethane	107	70 - 130
Toluene-d8	108	70 - 130

Method Blank - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051118

Validated by: dba - 11/21/05

QC Batch Analysis Date: 11/18/2005

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	94.9	70 - 130
Dibromofluoromethane	89.3	70 - 130
Toluene-d8	97.4	70 - 130

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Laboratory Control Sample / Duplicate - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051118

Reviewed by: dba - 11/21/05

QC Batch ID Analysis Date: 11/18/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	22.4	µg/L	112	70 - 130
Methyl-t-butyl Ether	<1.0	20	23.0	µg/L	115	70 - 130
Toluene	<0.50	20	23.1	µg/L	116	70 - 130

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	98.6	70 - 130
Dibromofluoromethane	110	70 - 130
Toluene-d8	103	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	21.4	µg/L	107	4.6	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	19.3	µg/L	96.5	17	25.0	70 - 130
Toluene	<0.50	20	22.1	µg/L	110	4.4	25.0	70 - 130

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	95.1	70 - 130
Dibromofluoromethane	109	70 - 130
Toluene-d8	103	70 - 130

Laboratory Control Sample / Duplicate - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051118

Reviewed by: dba - 11/21/05

QC Batch ID Analysis Date: 11/18/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	153	µg/L	123	65 - 135

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	96.8	70 - 130
Dibromofluoromethane	90.3	70 - 130
Toluene-d8	95.6	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	128	µg/L	103	18	25.0	65 - 135

Surrogate % Recovery Control Limits

4-Bromofluorobenzene	94.9	70 - 130
Dibromofluoromethane	87.3	70 - 130
Toluene-d8	98	70 - 130

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Method Blank - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051116

Validated by: MaiChiTu - 11/17/05

QC Batch Analysis Date: 11/16/2005

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	100	70	-	130
Dibromofluoromethane	107	70	-	130
Toluene-d8	107	70	-	130

Method Blank - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051116

Validated by: MaiChiTu - 11/17/05

QC Batch Analysis Date: 11/16/2005

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	97.1	70	-	130
Dibromofluoromethane	88.7	70	-	130
Toluene-d8	96.7	70	-	130

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Laboratory Control Sample / Duplicate - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051116

Reviewed by: MaiChiTu - 11/17/05

QC Batch ID Analysis Date: 11/16/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	20.7	µg/L	104	70 - 130
Methyl-t-butyl Ether	<1.0	20	20.3	µg/L	102	70 - 130
Toluene	<0.50	20	21.4	µg/L	107	70 - 130

Surrogate

	% Recovery	Control Limits
4-Bromofluorobenzene	98.1	70 - 130
Dibromofluoromethane	107	70 - 130
Toluene-d8	103	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	22.6	µg/L	113	8.8	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	22.5	µg/L	112	10	25.0	70 - 130
Toluene	<0.50	20	23.7	µg/L	118	10	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	101	70 - 130
Dibromofluoromethane	110	70 - 130
Toluene-d8	104	70 - 130

Laboratory Control Sample / Duplicate - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051116

Reviewed by: MaiChiTu - 11/17/05

QC Batch ID Analysis Date: 11/16/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	123	µg/L	98.4	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.3	70 - 130
Dibromofluoromethane	88.2	70 - 130
Toluene-d8	97.1	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	123	µg/L	98.2	0.16	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.4	70 - 130
Dibromofluoromethane	88	70 - 130
Toluene-d8	97.7	70 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051120

Validated by: dba - 11/21/05

QC Batch Analysis Date: 11/20/2005

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	94.5	70 - 130
Dibromofluoromethane	106	70 - 130
Toluene-d8	105	70 - 130

Method Blank - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051120

Validated by: dba - 11/21/05

QC Batch Analysis Date: 11/20/2005

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank % Recovery Control Limits

4-Bromofluorobenzene	91.5	70 - 130
Dibromofluoromethane	88.4	70 - 130
Toluene-d8	95.2	70 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Laboratory Control Sample / Duplicate - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051120

Reviewed by: dba - 11/21/05

QC Batch ID Analysis Date: 11/20/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	21.4	µg/L	107	70 - 130
Methyl-t-butyl Ether	<1.0	20	21.7	µg/L	108	70 - 130
Toluene	<0.50	20	22.5	µg/L	112	70 - 130

Surrogate

	% Recovery	Control Limits
4-Bromofluorobenzene	98.3	70 - 130
Dibromofluoromethane	107	70 - 130
Toluene-d8	102	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	19.2	µg/L	96.0	11	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	17.3	µg/L	86.5	23	25.0	70 - 130
Toluene	<0.50	20	19.9	µg/L	99.5	12	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	94.3	70 - 130
Dibromofluoromethane	104	70 - 130
Toluene-d8	102	70 - 130

Laboratory Control Sample / Duplicate - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051120

Reviewed by: dba - 11/21/05

QC Batch ID Analysis Date: 11/20/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	113	µg/L	90.5	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	92.1	70 - 130
Dibromofluoromethane	84.6	70 - 130
Toluene-d8	94.9	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	121	µg/L	96.6	6.5	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	95.3	70 - 130
Dibromofluoromethane	85.3	70 - 130
Toluene-d8	96.6	70 - 130

Entech Analytical Labs, Inc.

Chain of Custody / Analysis Request

3334 Victor Court

(408) 588-0200

Santa Clara, CA 95054 (408) 588-0201 - Fax

Attention to:

JIM GREEN

Company Name:

ECM GROUP

Mailing Address:

P.O. BOX 802

City:

BENICIA

Sampler:

MIC JACKSON

Field Org. Code:

Phone No.: 707-551-0655

Fax No.: 707-551-0653

Project Number: 98-516-14

email:

Project Name: COTATI

Global ID:

1002103

Project Location:

City:

State:

CA

Zip:

94510

State:

Zip:

APPENDIX D

WATER SAMPLING DATA SHEETS

**WATER LEVEL &
PRODUCT MEASUREMENTS**

ECM group

PROJECT NAME & NUMBER: 98-316-14

DATE: 11/9/05

BY: MJS

COTATI

WELL ID	TIME MEASURED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH	COMMENTS: (well condition, odor, etc.)
MW-1A		6.79	19.85	2"	
MW-2A		8.08	19.75	2"	
MW-3		6.89	24.15	2"	
MW-4		6.13	25.00	2"	
MW-5		6.44	24.65	2"	
MW-6		8.20	19.90	2"	
MW-7A		9.12	50.00	2"	
MW-7B		12.24	80.00	2"	
MW-8A		9.15	50.00	2"	
MW-8B		9.90	80.00	2"	

WATER SAMPLING DATA

Job Name COTATI Job Number 98-516-14
 Well Number MW-1A Date 11/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 19.85
 Depth to Water (static) 6.79 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 13.06
 Total to be evacuated = 3 x Initial Volume

Volume 2.12 gallons
6.38 gallons

Formulas/Conversions

r = well radius in ft
 h = ht of water col. in ft
 vol. in cyl. = $\pi r^2 h$
 $7.48 \text{ gal}/\text{ft}^3$
 $V_1 \text{ casing} = 0.163 \text{ gal}/\text{ft}$
 $V_2 \text{ casing} = 0.367 \text{ gal}/\text{ft}$
 $V_3 \text{ casing} = 0.653 \text{ gal}/\text{ft}$
 $V_4 \text{ casing} = 1.226 \text{ gal}/\text{ft}$
 $V_5 \text{ casing} = 1.47 \text{ gal}/\text{ft}$

Cum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Boiled</u>	<u>Pumped</u>

Pumped or Boiled Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____
 Description of sediments or material in sample: _____
 Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	74.6	74.3	74.1				
pH	7.13	7.08	6.97				
EC (umhos/cm)	1554	1459	1451				

Special Conditions: _____SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

11/30

WATER SAMPLING DATA

Job Name COTAT I Job Number 98-516-14
 Well Number MW-2A Date 11/9/95 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 19.75
 Depth to Water (static) 8.08 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 11.67 Volume 1.90 gallons
 Total to be evacuated = $3 \times$ Initial Volume 5.70 gallons

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>	<u>Cum. Gal.</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

<u>Reading No.</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
Time							

Gallons: _____

Temp. (degree F) 71.4 71.4 71.3

pH 7.25 7.03 7.12

EC (microsiemens/cm) 10.51 10.38 12.20

Special Conditions: _____

SAMPLES COLLECTED

<u>Sample ID ml</u>	<u>Bottle/ cap</u>	<u>Filtered (size, u)</u>	<u>Preservative (type)</u>	<u>Refrig. (R, NR)</u>	<u>Lab (Init)</u>	<u>Analysis Requested</u>

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polysulfone; V = VOA/Teflon septa; M = Metal

111025

WATER SAMPLING DATA

Job Name COTAT! Job Number 98-516-14
 Well Number MW-3 Date 11/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 24.15
 Depth to Water (static) 6.89 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 17.26
 Total to be evacuated = 3 x Initial Volume

Volume 2.81 gallons
8.44 gallons

Bumbyla/Conversions
 $r = \text{well radius in ft}$
 $b = \text{ht of water col. in fr}$
 $\text{vol. in cyl.} = \pi r^2 b$
 2.48 gal/ft^3
 $V_1 = \text{casing} = 0.163 \text{ gal/ft}$
 $V_2 = \text{casing} = 0.367 \text{ gal/ft}$
 $V_3 = \text{casing} = 0.653 \text{ gal/ft}$
 $V_4 = \text{casing} = 0.826 \text{ gal/ft}$
 $V_5 = \text{casing} = 1.47 \text{ gal/ft}$

Cum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____
 Description of sediments or material in sample: _____
 Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	<u>70.6</u>	<u>72.3</u>	<u>72.4</u>				
pH	<u>7.17</u>	<u>6.90</u>	<u>6.88</u>				
EC (umhos/cm)	<u>1234</u>	<u>1224</u>	<u>1249</u>				

Special Conditions: _____

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (lnt)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

11:55

WATER SAMPLING DATA

Job Name COTATI Job Number 98-516-14
 Well Number MW-4 Date 11/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____
 Depth to Water (static) 6.13 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 18.87 Volume 3.07 gallons
 Total to be evacuated = $3 \times$ Initial Volume 9.22 gallons

Pump/Well Conversion

 $r =$ well radius in ft $h =$ ht of water col in ftVol. in cyl. = $\pi r^2 h$ $2.48 \text{ gal}/\text{ft}^3$ $V_1 =$ casing = $0.163 \text{ gal}/\text{ft}$ $V_1 =$ casing = $0.367 \text{ gal}/\text{ft}$ $V_1 =$ casing = $0.653 \text{ gal}/\text{ft}$ $V_{10} =$ casing = $0.826 \text{ gal}/\text{ft}$ $V_1 =$ casing = $1.47 \text{ gal}/\text{ft}$

Cum. Gal.

Stop Time	Start Time	Bailed	Pumped

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____
 Description of sediments or material in sample: _____
 Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							

Gallons

Temp. (degree F)	<u>63.5</u>	<u>63.4</u>	<u>63.5</u>				
------------------	-------------	-------------	-------------	--	--	--	--

pH	<u>8.08</u>	<u>7.96</u>	<u>7.63</u>				
----	-------------	-------------	-------------	--	--	--	--

EC (umhos/cm)	<u>1480</u>	<u>1010</u>	<u>1214</u>				
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Special Conditions

SAMPLES COLLECTED

Sample ID ml	Bottle/cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

11/16

WATER SAMPLING DATA

Job Name COTATIJob Number 98-516-14Well Number MW-5 Date 11/9/05

Time _____

Well Diameter 2"

Well Depth (spec.) _____

Well Depth (sounded) 24.65Depth to Water (static) 6.44 TOC elev. _____

G.W. Elev. _____

Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 18.21Volume 2.96 gallons

Total to be evacuated = 3 x Initial Volume

8.90 gallons

Formulas/Conversions

r = well radius in ft

b = ht of water col. in ft

vol. in cyl. = $\pi r^2 b$ 7.48 gal/ft³ V_1 casing = 0.163 gal/ft V_2 casing = 0.367 gal/ft V_3 casing = 0.633 gal/ft V_4 casing = 1.026 gal/ft V_5 casing = 1.47 gal/ft

Cum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>	<u>Cum. Gal.</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____

Water color _____

Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.

1 2 3 4 5 6 7

Time _____

Gallons _____

Temp. (degree F)

66.5 64.6 63.9

pH

7.66 7.38 7.26

EC (umhos/cm)

1952 1654 1694

Special Conditions: _____

SAMPLES COLLECTED

Sample ID ml	Bottle/cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Unit)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)

Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

1055

WATER SAMPLING DATA

Job Name COTATI Job Number 98-516-14
 Well Number MW-6 Date 11/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 19.90
 Depth to Water (static) 8.20 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 11.70

Total to be evacuated = 3 x Initial Volume

Volume 1.90 gallons
5.72 gallons

Formulas/Conversions
 $r = \text{well radius in ft}$
 $h = \text{ht of water col. in ft}$
 $\text{vol. in cyl.} = \pi r^2 h$
 $7.48 \text{ gal}/\text{ft}^3$
 $V_1" \text{ casing} = 0.163 \text{ gal}/\text{ft}$
 $V_2" \text{ casing} = 0.367 \text{ gal}/\text{ft}$
 $V_3" \text{ casing} = 0.653 \text{ gal}/\text{ft}$
 $V_4" \text{ casing} = 0.826 \text{ gal}/\text{ft}$
 $V_5" \text{ casing} = 1.47 \text{ gal}/\text{ft}$
Cum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color: _____ Odor: _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							

Gallons:

Temp. (degree F) 73.2 74.4 74.3

pH 6.95 6.88 6.98

EC (micrhos/cm) 2249 2109 2144

Special Conditions: _____

SAMPLES COLLECTED

Sample ID ml	Bottle/cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

10:35

WATER SAMPLING DATA

Job Name COTAT I Job Number 98-516-14
 Well Number MW-7A Date 11/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 50.00
 Depth to Water (static) 9.12 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 40.88 Volume 6.66 gallons + 326
 Total to be evacuated = $3 \times$ Initial Volume 3.40 gallons

Formulas/Conversions
 r = well radius in ft
 h = ht of water col. in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft³
 V_1 = casing = 0.163 gal/ft
 V_2 = casing = 0.367 gal/ft
 V_3 = casing = 0.653 gal/ft
 V_4 = casing = 1.226 gal/ft
 V_5 = casing = 1.47 gal/ft
Cum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____
 Description of sediments or material in sample: _____
 Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							

Gallons

Temp. (degree F) 68.5 67.9 67.6

pH 7.27 7.24 7.18

EC (umhos/cm) 1038 1046 1065

Special Conditions: _____

SAMPLES COLLECTED

Sample ID ml	Bottle/cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

13.25

WATER SAMPLING DATA

Job Name COTATI Job Number 98-516-14
 Well Number MW-7B Date 11/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 80.00
 Depth to Water (static) 12.24 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 67.76 Volume 11.04 gallons
 Total to be evacuated = 3 x Initial Volume 7.78 gallons

<u>Stop Time</u>	<u>Start Time</u>	Bailed	Pumped	<u>Cum. Gal.</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____
 Description of sediments or material in sample: _____
 Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	<u>73.4</u>	<u>70.3</u>	<u>69.2</u>				
pH	<u>7.80</u>	<u>7.44</u>	<u>7.10</u>				
EC (microhos/cm)	<u>1307</u>	<u>1265</u>	<u>1253</u>				

Special Conditions: _____SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

Formulas/Conversions
 $r = \text{well radius in ft}$
 $h = \text{ht of water col. in ft}$
 $\text{vol. in cyl.} = \pi r^2 h$
 7.48 gal/ft^3
 $V_1 = \text{casing} = 11.163 \text{ gal/ft}$
 $V_2 = \text{casing} = 11.367 \text{ gal/ft}$
 $V_3 = \text{casing} = 0.653 \text{ gal/ft}$
 $V_{d1} = \text{casing} = 0.826 \text{ gal/ft}$
 $V_{d2} = \text{casing} = 1.47 \text{ gal/ft}$

Cum. Gal.

WATER SAMPLING DATA

Job Name COTATI Job Number 98-516-14
 Well Number MW-8A Date 11/9/95 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 50.00
 Depth to Water (static) 9.15 TOC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 40.85

Total to be evacuated = 3 x Initial Volume

Volume 10.65 gallons + 3.26
9.91 gallons

Definitions/Conversions
 $r = \text{well radius in ft}$
 $h = \text{ht of water col. in ft}$
 $\text{vol. in cyl.} = \pi r^2 h$
 7.48 gal/ft^3
 $V_c = \text{casing} = 0.163 \text{ gal/ft}$
 $V_{1/2} = \text{casing} = 0.367 \text{ gal/ft}$
 $V_{1/4} = \text{casing} = 0.653 \text{ gal/ft}$
 $V_{3/4} = \text{casing} = 0.826 \text{ gal/ft}$
 $V_{1/2} = \text{casing} = 1.47 \text{ gal/ft}$
Cum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							

Gallons

Temp. (degree F) 73.1 72.2 72.0

pH 11.75 11.35 11.96

EC (umhos/cm) 2275 2512 2442

Special Conditions: _____

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

6245

WATER SAMPLING DATA

Job Name COTATI Job Number 98-516-14
 Well Number MW-8B Date 1/9/05 Time _____
 Well Diameter 2" Well Depth (spec.) _____ Well Depth (sounded) 80.00
 Depth to Water (static) 9.90 TDC elev. _____
 G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 70.10Volume 11.42 gallons + 3.26

Total to be evacuated = 3 x Initial Volume

14.68 gallons

Burrard's Equations

r = well radius in ft
 h = ht of water col. in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft^3
 V_1 casing = 0.163 gal/ft
 V_2 casing = 0.367 gal/ft
 V_3 casing = 0.653 gal/ft
 V_{12} casing = 0.820 gal/ft
 V_{13} casing = 1.47 gal/ft

Gum. Gal.

<u>Stop Time</u>	<u>Start Time</u>	<u>Bailed</u>	<u>Pumped</u>

Pumped or Bailed Dry? Yes No After _____ gallons Recovery Rate _____
 Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							

Gallons

Temp. (degree F) 71.9 69.9 68.9pH 7.67 7.04 6.73EC (umhos/cm) 760 732 758

Special Conditions: _____

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

12/20

APPENDIX E

ECM STANDARD OPERATING PROCEDURE

ECM STANDARD OPERATING PROCEDURE

GROUND WATER SAMPLING

The following describes sampling procedures used by ECM field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is purged of a minimum of three well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed 10%).

Ground water samples are collected from the wells/borings with steam-cleaned or disposable Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4°C with blue ice or ice) for transport under chain-of-custody to the laboratory.

The chain-of-custody form includes the project number, analysis requested, sample ID, date analysis and the ECM field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.